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BEFORE
THE FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, DC 20554

In the Matter of	)	
	)	
Unbundled Access to Network Elements	)	WC Docket No. 04-313
	)	
Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers	)	CC Docket No. 01-338

REDACTED AFFIDAVIT OF
BEN JOHNSON

I, BEN JOHNSON, being first duly sworn on oath, depose and say:

I. Qualifications

1. My name is Ben Johnson. I am a consulting economist and President of Ben Johnson Associates, Inc.® (BJA), a firm of economic and analytic consultants specializing in the area of public utility regulation. My business address is 2252 Killearn Center Boulevard, Tallahassee, Florida 32309.

2. I graduated with honors from the University of South Florida with a Bachelor of Arts degree in Economics in March 1974. I earned a Master of Science degree in Economics at Florida State University in September 1977. Finally, I graduated from Florida State University in April 1982 with the Ph.D. degree in Economics.

3. I have prepared and presented expert testimony on more than 300 occasions before state and federal courts, the Federal Communications Commission, and utility regulatory commissions in 35 states, two Canadian provinces, and the District of Columbia. I have been actively involved in more than 400 regulatory dockets, concerning telecommunications and other utilities. My work has spanned a wide range of different subject areas, involving the application of economic theory and principles to public policy issues in telecommunications and other regulated industries.

4. BJA was retained by various clients to provide expert testimony and other assistance in the following state Triennial Review proceedings: Public Utilities Commission of Ohio Case No. 03-2040-TP-COI (Ohio Proceeding); Michigan Public Service Commission Docket No. U-13796; Florida Public Service Commission Docket No. 030851-TP; New York State Public Service Commission Docket 03-C-0821; Kansas Corporation Commission Docket No. 03-GIMT-1063-GIT; Arizona Corporation Commission Docket No. T-00000A-03-0369; New Mexico Public Regulation Commission Cases 03-00403-UT and 03-00404-UT; and Public Utility Commission of Texas Docket 28607.

5. I and other members of my firm reviewed and analyzed numerous documents relating to appropriate market definitions, the extent of impairment, and related issues in each of these proceedings, pursuant to the requirements of the FCC's August 21, 2003 Report and Order and Order on Remand and Further Notice of Proposed Rulemaking in dockets 01-338, 96-98, and 98-147 (Triennial Review Order or TRO).

II. Purpose

6. This affidavit was prepared at the request of the Ohio Consumers' Counsel (OCC) for use in preparing its submittal to the FCC in response to the FCC's August 20, 2004 Order and Notice of Proposed Rulemaking (NOPR). Pursuant to ¶15 of the NOPR, I am providing factual evidence and highlighting information that would be relevant under the guidance of USTA II.

III. Background

7. The Ohio Proceeding was undertaken in two phases – one in which the Ohio Commission tentatively defined the "markets" and one in which it intended to determine impairment in these markets. The Ohio Commission issued an Opinion and Order on January 14, 2004 which tentatively resolved the market definition debate that was the focus of Phase I. It established the markets that were to frame the debate over "triggers" in Phase II. Before the latter debate could be resolved, however, the Ohio Proceeding was held in abeyance due to the United States Court of Appeals, D.C. Circuit's decision to vacate state commission jurisdiction

over the determination of impairment. Subsequent sections of this affidavit are organized in a similar manner to the structure of the Ohio Proceeding – Section IV examines how to appropriately define the markets while Section V examines how to most appropriately conduct an impairment analysis.

IV. Market Definition

Preliminary Comments

8. Telecommunications markets have been defined by regulators for other purposes (e.g., reviewing requests for mergers, reviewing requests for extended calling areas). In the absence of a well established body of economic literature or regulatory law concerning the most appropriate method and criteria for defining the relevant market for impairment purposes, it can be useful to look at what has been learned by economists and regulators looking at similar issues under different circumstances.

9. The Department of Justice (DOJ) and Federal Trade Commission's (FTC) Horizontal Merger Guidelines (HMGs) outline two types of markets–a product market and a geographic market. Some of the principles set forth in the HMGs can be appropriately applied to the impairment question. In defining both geographic and product markets, the DOJ/FTC recommend utilizing what they call the "smallest market" principle. They first define this principle in the context of a geographic market as follows:

> In defining the geographic market or markets affected by a merger, the Agency will begin with the location of each merging firm (or each plant of a multiplant firm) and ask what would happen if a hypothetical monopolist of the relevant product at that point imposed at least a "small but significant and nontransitory" increase in price, but the terms of sale at all other locations remained constant. If, in response to the price increase, the reduction in sales of the product at that location would be large enough that a hypothetical monopolist producing or selling the relevant product at the merging firm's location would not find it profitable to impose such an increase in price, then the Agency will add the location from which production is the next-best substitute for production at the merging firm's location. [Section 1.21]

It is further explained in the context of a product market.

> The Agency will begin with each product (narrowly defined) produced or sold by each merging firm. ... then the Agency will add to the product group the product

that is the next-best substitute for the merging firm's product. [Section 1.1]

10. In the case of both types of markets, the DOJ/FTC methodology entails a "start small and build up" approach, starting with a small area or group of products and adding area or products to that small set until a benchmark is reached.

11. This "start small and build up" approach is consistent with the TRO. The FCC asked state regulators to "distinguish among markets where different findings of impairment are likely." [TRO, ¶ 495] A large geographic area contains more topographic and demographic variation that a small geographic area. These types of variation result in a greater chance that CLEC impairment will vary across the large area. For instance, in areas where large numbers of customers are located close together, a finding of "no impairment" is more likely to be appropriate than in an area where small numbers of customers are widely spread out. In general, if the fixed costs of collocation and transport can be spread over large numbers of customers in a cluster of adjacent wire centers, impairment will be less of a problem. If one focuses on large geographic areas containing widely different characteristics, it is difficult to adequately "distinguish among markets where different findings of impairment are likely." By "starting small and building up," however, the FCC can select small areas with significantly less topographic and demographic variation, thereby forming markets where CLECs are either impaired or not impaired *throughout* the entire market.

12. The "start small and build up" approach better serves other TRO guidelines as well. For instance, by starting with a small area, one can more easily determine "the locations of customers actually being served (if any) by competitors." [Id.] If a small area is too small to meet other TRO guidelines like CLEC "scale and scope economies,", more small areas can be added to the initial area, (or "build up") in order to achieve a market that is large enough to accommodate CLEC "scale and scope economies." [Id.] Finally, CLEC "targeting" and "serving" of markets occurs most commonly in the context of relatively small areas. [Id.]

13. In deciding whether to enter a given market, a CLEC will undertake a series of decisions. From a business planning standpoint, these include how to enter, which services to offer, whether to use their own switch or to rely on resale and the like. For example, a CLEC quite realistically might decide to install a switch in a major metropolitan area, because of the sheer number of customers in that market. Similarly, the CLEC may have some specific customers in mind when it installs the switch, and thus it may immediately start marketing and selling to these particular customers in the metropolitan area. Once it has hooked up these customers, it may look for other growth opportunities. Since its switch is already in place, it might examine whether it would be profitable to broaden its marketing effort and attempt to serve other customers in the metropolitan area, or whether it should expand to other parts of the

state.

14. At some point in the expansion/entry process, the CLEC will need to analyze its operations on a more granular level. The CLEC will typically focus on individual wire centers, looking at the cost of collocation, the cost of connecting to customers in a wire center and other factors, in order to determine if it can profitably serve a wire center with its switch. This process may start with consideration of specific wire centers in the downtown metropolitan area, but it may eventually involve analysis of wire centers in outlying suburbs.

15. Each step of the way, the CLEC must consider the fixed and variable costs of the entry decision in question, taking into account the fixed cost of collocation and the other investments involved in that entry option. The CLEC will not likely take the next step unless it has a reasonable expectation of recovering its fixed costs over the life cycle of the investment in question. The CLEC might incur collocation costs, costs for various pieces of equipment to be installed in the collocation area, and additional costs required to serve both large business and residential customers.

16. Clearly, CLEC entry is not an all-or-nothing decision that occurs exclusively on the basis of large areas. Rather, it is a sequential process that evolves and changes over time, with many of the key entry decisions occurring at the wire center level or at an even more granular level. Consequently, it is preferable to examine the characteristics of individual wire centers–those factors which would cause or prevent a CLEC from serving that area "economically and efficiently using currently available technologies." [Id.] While this is can be a very complex process, it is integral to a market definition methodology rooted in economic theory.

Geographic Markets

17. In all of the state impairment proceedings in which BJA participated there have been two major sides to the market definition debate–those in favor of defining markets as large geographic areas and those in favor of defining markets as small geographic areas (individual wire centers, or clusters of wire centers). The first camp includes a diverse group of parties, including Verizon, SBC, BellSouth, and other incumbent local exchange carriers (ILECs), as well as AT&T and some other competitive local exchange carriers (CLECs). The second camp includes MCI and some other CLECs.

18. Given that the FCC has prohibited using the entire state as a single geographic market, the largest allowable market definition options that were considered in the Ohio (and other) proceedings consisted of large portions of a state. For example, one option was to use the

Local Access and Transport Areas (LATAs) which were initially designated at the end of the AT&T antitrust case. There are 9 LATAs in Ohio, cumulatively encompassing the entire state. MSAs, defined by the Office of Management and Budget, provide another example of a large geographic area. There are currently 14 MSAs in Ohio. These generally cover large portions of the state, but do not cover it completely, since many small towns and rural areas fall outside the boundaries of the MSAs. In my view, none of these were acceptable options, since they were not sufficiently granular, and since they do not represent relevant market areas.

19. If a state is divided into just a handful of broad markets, each containing widely varying market conditions, grave difficulties are encountered in performing a granular analysis. If large geographic areas are treated as a single market, the risk is that these broad markets will yield conclusions concerning impairment that are only valid for some customers (e.g., those in downtown Cleveland) and are not valid for other customers (e.g., those in adjacent suburbs).

20. Broad areas such as Metropolitan Statistical Areas (MSAs) and Component Economic Areas (CEAs) contain urban, suburban and rural areas. Consequently, there are often extreme differences in operating and engineering characteristics between specific wire centers within each area. In turn, these differences translate into substantial differences in the cost of using a CLEC switch to serve mass market customers in different wire centers within a single area. For example, the number of enterprise customers may differ; similarly, different UNE loop rates may apply to urban and rural wire centers within an area. For this and other reasons there may be substantial differences in the effective cost per line of serving customers using a CLEC switch (e.g., due to differences in available economies of scale with respect to inter-office transport facilities and collocation facilities).

21. Due to the extreme heterogeneity within LATAs, MSAs and CEAs, these are not sufficiently granular for purposes of identifying where impairment exists. By looking at aggregate data for these broad geographic areas, one might conclude that impairment exists, (or doesn't exist), without realizing that impairment is a problem in a part of the area, and not a problem in another part of the area. This lack of granularity is analogous to the story about the river that is 18 inches deep on average; the problem is that the river actually ranges from one inch deep to 30 feet deep. Looking at the aggregate (average) data, one cannot tell whether it is feasible to wade across the river. Similarly, the mix of high revenue customers and low revenue customers may differ throughout a broad geographic area like a LATA, MSA or CEA. Hence, CLECs may confront entirely different conditions in considering the potential for using their own switch to serve mass market customers in different parts of the overall area. To overcome this difficulty, I believe it is preferable to define the relevant markets on the basis of individual wire centers, or small clusters of wire centers having homogeneous characteristics.

22. Because of these problems, in the Ohio proceeding, as well as in other state proceedings, I recommended that the relevant market be defined as a small cluster of wire centers having homogeneous characteristics. I believe this approach was fully consistent with the guidelines set forth in the TRO, as well as sound economic theory.

Product Markets

23. Geography should not be the lone factor considered in the process of defining "markets." Customer demand plays a significant role in determining where "markets" exist. Residential and small business mass market customers tend to purchase different products (or pay different rates for similar products). From an economic perspective, then, it is appropriate to recognize that residential and business customers purchase services in distinct product markets (or sub-markets).

24. These demand-based markets are not uncommon. In the general economy, a "retail market" is typically distinguished from a "wholesale market" even where essentially the same products (e.g., automobiles) are being sold in each market. Similarly, in telecommunications, it is common to distinguish between residential and business customers. Consequently, it could be appropriate to place residential and business mass market switched services in separate markets, since the underlying market conditions, including typical rate structures, rate levels and gross profit margins, are so different.

25. Distinct product markets are significant in the context of an impairment examination because of differences between the residential and business markets that might cause CLECs to serve business customers with their own switching equipment, yet find it impractical to serve residential customers with this equipment. For example, due to differing profit margins, CLECs may be able to profitably serve only the small business portion of the mass market with their own facilities; CLECs may only be able to serve residential customers using resale or UNE-P. Were this the case, it would be reasonable to conclude that CLECs are not impaired in the small business "sub-market," but they are impaired in the residential "sub-market."

26. The potential exists for differences in product markets to prove significant, leading to different conclusions concerning the degree of impairment that exists depending upon whether the focus is on residential customers or business customers. If residential and business customers are lumped into a single market, as the TRO largely contemplates, evidence may be overlooked, or not obtained, which would cause one to reach very different conclusions concerning the degree of impairment, depending upon whether theanalysis is focused on residential or business market data.

27. From a CLEC's perspective, the opportunities and pitfalls in trying to profitably attract and serve residential customers may be entirely different than the corresponding opportunities and pitfalls involved in serving mass market business customers. The revenues generated by a typical customer are greatly different in the residential and business markets.

28. The great majority of residential customers have only a single phone line, the remainder generally have just two. It is much more common for business customers to have three or more lines. As well, revenues tend to vary widely due to differences in rate levels, rate structures, and service quantities (e.g., number of toll minutes). Accordingly, the average revenue received from a typical small business customer is likely to be many times greater than the average revenue received from a typical residential customer. (The discrepancy is even greater when considering low income residential customers and others who don't purchase optional services like Call Waiting and Caller ID).

29. Because of these fundamental differences between residential and business mass market customers, a CLEC may conclude that gross profit margins are larger in the small business market and, therefore, conclude that it cannot afford the high collocation costs and other burdens of connecting residential customers to its own switch.

30. While per-customer revenue differences are probably the most important factor to consider, there may be other factors that influence the ability of CLECs to profitably service residential and small business customers using their own switch. For example, a CLEC may conclude that business customers are more responsive to innovation and quality improvements. As a result, it may decide the added costs of connecting business customers to its own switch can be justified by the ability to market its offerings as providing higher quality or more technically advanced features than what the incumbent offers. In the residential market, in contrast, the CLEC may conclude this type of marketing pitch will not be persuasive, and thus it cannot profitably serve residential customers using its own switching equipment.

31. Given these many differences, a CLEC may find it is feasible to serve business customers using its own switch, while simultaneously finding it cannot profitably serve residential customers using that same piece of equipment. Stated differently, differences in the underlying market characteristics may justify placing residential and business customers in two separate markets or sub-markets, and making different judgements on impairment.

32. In its TRO, the FCC appeared to recognize that customer-specific factors can influence whether or not impairment exists:

> Mass market customers consist of residential customers and very small business customers. Mass market customers typically purchase ordinary switched voice service (Plain Old Telephone Service or POTS) and a few vertical features. Some customers also purchase additional lines and/or high speed data services. Although the cost of serving each customer is low relative to the other customer classes, the low levels of revenue that customers tend to generate create tight profit margins in serving them. The tight profit margins, and the price sensitivity of these customers, force service providers to keep per customer costs at a minimum. Profits in serving these customers are very sensitive to administrative, marketing, advertising, and customer care costs. These customers usually resist signing term contracts. [Id., ¶ 127]

In this passage, the FCC recognized that profit margins in serving smaller customers are tighter than those available when serving larger customers, and this clearly has important implications in determining whether or not impairment exists. While the FCC didn't focus specifically on differences in average revenues per line or per customer, the overall thrust of this reasoning is consistent with an approach which draws such a distinction. As the revenue per customer declines, it becomes less and less feasible to profitably serve a customer using a CLEC's own switch, because insufficient profit margins exist to overcome the fixed (per-customer) costs of providing service using the CLEC's own facilities.

33. For this reason, one would anticipate that relatively few CLECs will serve residential customers using their own switches. Rather, CLECs that use their own switches primarily focus on serving larger customers–those generating much higher revenues per customer. As the FCC recognized:

> ...although serving these customers is more costly than mass market customers, the facts that enterprise customers generate higher revenues, and are more sensitive to the quality of service, generally allow for higher profit margins." [Id., ¶ 128]

34. Unless these differences in customer characteristics and gross profit margins are adequately considered in defining the market, there is a great risk of inadvertently reaching conclusions concerning impairment that are only valid for mass market small business customers–conclusions that are not valid for residential customers.

35. Differences in the underlying market characteristics justifies keeping residential and business customers in two separate markets or submarkets, at least under some factual circumstances.

Geographic Markets – SBC Ohio Proposal and OCC Response

36. In the Ohio Proceeding, SBC Ohio supported its proposal to define the market as an MSA on the basis of some broad impressions of the way CLECs typically choose to enter markets:

> Based on an assessment of how competitors enter local exchanges, in general, and the important role marketing and advertising plays in these entry decisions, in particular, the MSA is a reasonable and readily available representation of the geographic scope of such markets for local telecommunication services. [Tardiff Direct, p. 2]

37. Contrary to the approach advocated by SBC Ohio, it is not appropriate to rely almost exclusively on CLEC advertising campaigns and entry decisions to define the relevant market in the context of an impairment analysis. By this logic, if it could be shown that CLECs make their initial entry decisions on the basis of broad multi-state regions, it would be plausible to define the "Midwestern United States" as a single market – one in which both CBT and SBC Ohio operate. Needless to say, the entire Midwest may constitute a relevant telecommunications market for some purposes, but it is not relevant for purposes of this proceeding. For essentially the same reason, it is not appropriate to define the relevant geographic market in this proceeding on the basis of initial CLEC entry patterns or media markets.

38. While CLEC general entry patterns are of some interest, they should not be the primary focus of this effort, nor are they necessarily relevant to the task at hand. General entry decisions take into account multiple options, including pure resale, UNE-P and UNE-L.

39. Similarly, the boundaries of the media market in various parts of Ohio (and those boundaries are not the same as any of the specific market definitions put forward by CBT and SBC Ohio) tell us little about the costs of serving mass market customers.

40. Even if a CLEC typically makes its initial entry decision on the basis of broad media markets, as SBC Ohio claims, this tells us nothing about whether that CLEC will use its own switch, rely on pure resale, rely on UNE-P, or use a combination of methods. For instance, a CLEC might install a switch to serve enterprise customers, but be compelled to serve mass market customers using pure resale or UNE-P because of various impairment factors.

41. Just as entry decisions tell us little about facilities-based switching, so too advertising related decisions lack any specific relevance to the impairment issue. Even if a CLEC advertises its services throughout a broad geographic area, there is no guarantee those services will be marketed to mass market customers in addition to enterprise customers. More

importantly, even if a CLEC has incentives to widely advertise its services, that does not guarantee that a CLEC will face the same degree of cost and difficulty (impairment) in considering the option of using its own switch throughout the entirety of that large area.

42. A CLEC may find it feasible to serve mass market customers in one wire center, and only find it possible to serve enterprise customers in an adjacent wire center, due to differences in the mix of customers (e.g., high and low revenue customers), physical constraints, or other reasons.

43. SBC Ohio's analysis, and similar analyses by ILECs in other states, focused entirely on the extent to which CLECs are currently capable of serving customers, without adequately considering the extent to which they are currently, or could potentially, serve these customers using their own switches. The mere fact that a switch exists in the state, or the fact that this switch is used to serve some customers within a general geographic area, tells us very little about the degree to which that CLEC, or other CLECs, would be impaired in their ability to serve customers within this general area if the switching UNEs were no longer available.

44. The emphasis by SBC Ohio on media markets and overall entry decisions also ignores, or blurs, the distinction between mass market and larger customers. Advertising is not necessarily targeted at everyone within a media zone, nor is all advertising focused on the mass market.

45. Practices employed in advertising services to mass market and enterprise customers are often identical. To the extent differences exist, these differences are likely related to the distinction between residential and business customers more than they are related to small and large business customers. For example, marketing to both small and large customers often entails use of the same type of media. Thus, evidence concerning advertising patterns doesn't necessarily provide useful insight into the degree to which CLECs are impaired in their efforts to serve mass market customers in different geographic areas within a broad media market.

46. CLECs offer their customers a number of advanced telecommunications services. Due to infrastructure restrictions, these services may not be available to all potential customers in an MSA. DSL (Digital Subscriber Line) would be an example of such a service. While DSL subscribership in Ohio grows, some customers are simply unable to have the service installed in or to their home. This hurdle does not prevent CLECs from advertising their DSL service to a wide audience, but it does preclude them from using their facilities to provide DSL service to certain portions of the overall MSA.

47. For such advanced services, a CLEC may employ the Columbus mass media in its marketing efforts knowing full well that these services will only be purchased by customers located close to certain ILEC wire centers.

48. Clearly, the mere fact that a carrier is advertising in a particular region says little about the customers that it is trying to reach. It may adopt a wide-reaching effort simply because it wants to promote its services to as many potential customers as possible with a single ad. Just because that effort is wide-reaching does not mean that it is trying to attract mass market customers or that its services are even meant for use by those customers. A CLEC may focus on enterprise customers, yet still run advertising in the mass media.

49. The approach to market definitions advocated by SBC Ohio and other ILECs ignores the heterogeneity of large geographic areas such as MSAs. Most MSAs cover a very large geographic area which encompasses a range of heterogeneous conditions. SBC Ohio provides the following definitions for an MSA:

> In concept, a MSA is a county or group of counties having a large clustered population, including adjacent areas having a high degree of community of interest with the core population center. [Tardiff Direct, p. 10]
>
> Specifically, the Office of Management and Budget (OMB) defines MSAs as a county or group of counties with (1) a city of population 50,000 or more or (2) an urbanized area (as defined by the Census Bureau) of population of at least 50,000 consisting of one or more counties. [Id.]

50. SBC Ohio witness Dr. Tardiff then contended the following regarding MSAs:

> We would expect carriers to try to serve at least the MSA because the high degree of social and economic integration present in such areas implies that customers will demand services that cover at least this geographic area. [Id., p. 11]

51. While an MSA involves a substantial degree of "social and economic integration" it is also true that an MSA can encompass many different neighborhoods, and even multiple towns, cities and counties, with widely varying conditions. Having a "large clustered population," an MSA will invariably include a substantial urban component. Since most urban areas include a suburban fringe of bedroom communities, a typical MSA includes a mixture of urban and suburban markets. Furthermore, in a state like Ohio, which includes many rural areas, an MSA may be a "group of counties" that include substantial lightly populated rural areas beyond the suburbs.

52. This wide variation can result in extreme differences in operating and engineering characteristics between wire centers within the downtown urban core and wire centers toward the far edges of the MSA. In turn, these differences translate into substantial differences in the cost of serving mass market customers in different wire centers within a single MSA. For example, different UNE loop rates apply to urban and rural wire centers within an MSA. But these differences are just the tip of the iceberg. There can also be very substantial differences in the effective cost per line of serving customers using a CLEC switch (e.g., due to differences in available economies of scale with respect to inter-office transport facilities and collocation facilities).

53. Similarly, the mix of high revenue customers and low revenue customers may differ throughout an MSA. Hence, CLECs may confront entirely different conditions in considering the potential for using their own switch to serve mass market customers in different parts of an MSA.

54. In the Ohio Proceeding, I prepared some maps of the State of Ohio, the Columbus MSA, and the Cincinnati MSA. Copies of these maps have been attached to this affidavit. These maps demonstrated that CLECs are not randomly distributed throughout each MSA; rather, they are concentrated in particular areas, in response to heterogeneous characteristics within each MSA.

55. Map 1 showed the 6 largest Ohio MSAs served by SBC Ohio and CBT: Akron, Cincinnati-Middletown, Cleveland-Lorain-Elyria, Columbus, Dayton-Springfield, and Toledo. These boundaries and groupings (e.g. Dayton has been combined with Springfield) track the approach used by SBC Ohio and CBT in their Petitions, and do not necessarily reflect the current MSA boundaries published by the U.S. Census Bureau. These maps were developed using data provided by CBT and SBC Ohio. Although I cannot independently verify its accuracy, this was the best (e.g. most internally consistent) data source available for use in the Ohio Proceeding. Map 1 also showed the boundaries of the 9 Ohio LATAs, outlined in dark blue.

56. For reference and orientation, Map 2 showed these 6 MSAs in context, with the city limits and U.S. highways and interstates. One can easily see that all of the major population centers in the state are centered within an MSA, but the MSAs are large geographic areas that encompass numerous small towns and rural areas as well.

57. Map 3 showed the location of CLEC switches (triangles), the location of the ILEC switches (dots), and the approximate location of ILEC wire center boundaries within the Columbus MSA. There are 73 wire centers in the Columbus MSA, including 30 served by SBC Ohio, 18 by Sprint, 16 by Verizon, and 9 by ALLTEL. This map visually distinguished wire

centers on the basis of density. As this map demonstrated, the MSA is quite heterogeneous, and, as of the time the maps were prepared, the CLECs had only penetrated some of the denser, more urbanized portions of the MSA.

58. Confidential Maps 4 through 10 highlighted individual CLEC entry patterns within the Columbus MSA. These indicated that there are 7 CLECs with their own switches in the Columbus MSA. Each map showed the location of a specific CLEC switch (triangle), along with the ILEC switch locations (dots) and ILEC wire center boundaries which correspond to that CLEC switch. In other words, an ILEC wire center was only shown if SBC Ohio alleges mass market customers within that wire center were being served using the CLEC switch.

59. The data necessary to show residential and business customers separately was not provided in the SBC Ohio data responses. However, I would assume SBC Ohio knows, or could accurately estimate, the extent to which each CLEC is serving residential and business mass market customers. Among other reasons, most customers were previously served by the ILEC, and at that time they purchased either a business or residential class of service.

60. As well, the ILECs publish directories in which business customers are identified separately (e.g., with listings in the yellow pages). This type of data should be provided in order to determine whether impairment characteristics differ for residential and business customers.

61. Map 11 shows the wire centers where SBC Ohio alleged CLECs were collocated. The shading of each wire center indicated the number of CLECs collocated in that location. The darker the shade, the higher the number of CLECs serving that wire center with their own switch.

62. Maps 12 through 18 showed data for the Cincinnati MSA.

63. Map 12 showed the location of the CLEC switches (triangles), the location of the ILEC switches (dots), and the ILEC wire center boundaries within the Cincinnati MSA. Of the 63 wire centers in the Cincinnati MSA, 41 are served by CBT, 9 by Verizon, 8 by SBC Ohio, and 5 by Sprint. This map distinguished wire centers on the basis of density (access lines per square mile). As shown, CLECs have primarily located their switches in close proximity to the more densely populated portions of the overall MSA.

64. Maps 13 through 17 highlighted individual CLEC activity within the Cincinnati MSA. According to CBT, there were 5 CLECs with switches in the Ohio portion of the Cincinnati MSA. Each map showed the location of the CLEC switch (triangle), the ILEC switch locations (dots) and the ILEC wire center boundaries in which the CLEC is allegedly serving one or more mass market customers. Confidential Map 18 showed the Cincinnati area wire centers

shaded by number of CLECs collocated. The darker the shade, the higher the number of CLECs serving that wire center.

65. As explained earlier, defining an MSA or other broad geographic area as the geographic market could result in inappropriate, illogical, or misleading conclusions regarding impairment. The maps showed CLEC entry is disproportionately concentrated in the more urbanized portions of the MSA. There is no basis for assuming that entry patterns that have occurred in a downtown area or business district can be replicated in a suburban or rural area. This is particularly true if the difference between business and residential customers is ignored. Market conditions in the downtown area (e.g., number of enterprise customers) may be atypical, and thus entry may not easily be replicated in the residential market, or in other parts of the overall MSA.

66. The pattern of entry revealed in these maps suggests that some CLECs may have entered the MSA and installed switching facilities primarily to serve enterprise customers. While they may also serve some mass market customers (e.g., small business customers) that does not necessarily indicate anything about the degree of impairment which is present in attempting to serve residential customers – particularly those who are located in outlying areas, away from major concentrations of enterprise customers.

Geographic Markets – CBT Proposal and OCC Response

67. CBT's proposal to use the number of CLECs operating in a geographic area as a basis for defining the relevant market is contrary to one of the basic provisions set forth in the FCC's TRO. The FCC required state commissions to "first define the markets in which they will evaluate impairment by determining the relevant geographic area to include in each market." [TRO, ¶ 495]

68. CBT used its claims concerning the alleged lack of impairment to justify its market definition; this put the cart before the horse. The FCC concluded the following later in its TRO:

> We determine that – subject only to the limited exception set forth below – a state must find "no impairment" when three or more unaffiliated competing carriers each is serving mass market customers in a particular market with the use of their own switches. [Id., ¶ 501]

69. CBT's beliefs concerning alleged impairment (or the lack thereof) should not be the basis for developing a market definition. Rather, the underlying engineering, economic and demographic data should be used in determining the most appropriate market definition; once

that is done, data relating to CLEC entry patterns can and should be examined to determine the extent of impairment which is present within the previously defined market.

An Incorrect Approach to Markets

70. Viewing the entire MSA as a single market, one could get the false impression that the presence of a particular CLEC is an indication that all CLECs can easily serve mass market customers using their own switch, and thus one might be led to the conclusion that no switching impairment exists. However, CLEC activity in limited portions of a large geographic area is not necessarily an indication that other portions of that area can be penetrated with equal ease – any more than business related competitive activity is necessarily relevant to consideration of potential residential competition.

71. The danger in defining a larger than appropriate geographic market area has been exacerbated by the FCC's Errata to its TRO. According to the revised wording of the TRO, it is conceivable that a CLEC serving a single mass market customer in a single wire center could qualify as one of the three CLECs necessary to "trigger" a finding that impairment does not exist anywhere within the market. Considering that an MSA encompasses many wire centers serving widely varying areas, there is a real danger that CLEC activities in one portion of the MSA would not be representative of the impairment conditions existing in many other portions of the MSA.

A Correct Approach to Markets

72. Due to the wide variations that exist within LATAs and MSAs, it would be preferable to follow the "start small and build up" approach suggested by the FTC and DOJ.

73. It is much more logical to assume that facilities-based CLECs will initially be drawn to areas where enterprise customers are abundant, where there are large numbers of lines and per-line costs are low.

74. Using a "smallest market" approach similar to that used in the field of antitrust economics, it would be appropriate to adopt a market definition that keep residential and business customers separated, and is based on combining, where appropriate, individual wire centers, based upon a detailed review of the evidence concerning the economic and engineering factors applicable to each wire center.

75. I would anticipate that if this process is followed appropriately, the resulting definition would not be any larger than the size of a local calling area (as described in the

affidavit of OCC witness Kathy Hagans) or the access areas which are currently used to define UNE loop rate zones. For example, the Sugar Grove local calling area does not include Columbus, even though Sugar Grove is in the Columbus MSA. In addition, Sugar Grove is in a different access area from most exchanges in and around downtown Columbus. I would anticipate that a valid market definition would not lump the Sugar Grove wire center with the downtown Columbus wire centers.

76. If my recommendation to define the relevant markets as small clusters of wire centers (e.g., ones having homogeneous characteristics) is adopted, it can build up to a tentative market definition based upon similarities in the mix of business and residential customers, similarities in the UNE loop rates, and other homogeneous characteristics, as well as the boundaries of existing local calling areas.

77. To the extent one looks at CLEC entry patterns, it would be more appropriate to analyze these entry patterns on an individual wire center basis, as I did in the maps accompanying my affidavit.

Response to Ohio Commission's Market Definition

78. The Ohio Commission issued an Opinion and Order on January 14, 2004 which tentatively resolved the market definition debate for purposes of the Ohio Proceeding. The Ohio Commission found that

> the appropriate geographic markets to be used for the purpose of assessing whether a CLEC is impaired in serving mas market customers in the absence of access to unbundled local switching shall tentatively be established in the following manner:
>
> (1) The service area of an ILEC within each of the MSAs at issue in this proceeding (Akron, Cincinnati, Cleveland-Elyria-Mentor, Columbus, Dayton, and Toledo) shall be divided into separate areas according to the Commission-established UNE-loop TELRIC rates (Access Areas B, C, and D for SBC Ohio or Rate Bands 1, 2, and 3 for Cincinnati Bell).
> (2) Each resulting area established above shall be further subdivided into clusters of contiguous wire centers within each applicable UNE-loop TELRIC rate zone. [Ohio Market Definition Order, p. 24]

79. In general, I strongly agree with the Ohio Commission's policy decision to define markets as small clusters of wire centers with homogenous characteristics. Moreover, I believe

the specific markets adopted by the Ohio Commission generally comport well with this policy decision. However, there are some instances in which the adopted markets are not as homogenous as would be desirable. While this isn't necessarily a fatal flaw, in some cases the lack of homogeneity is significant, because it reduces the likelihood that conclusions drawn with respect to a lack of impairment based upon existing CLEC activity in one part of the market will also be valid with respect to other parts of the market.

80. In two of the Markets where the trigger has allegedly been pulled (impairment allegedly isn't present) according to the testimony filed by SBC Ohio witness Deere (Cleveland Market 7 and Columbus Market 13), the Ohio Commission grouped together wire centers that are not very homogenous. For instance, the Ohio Commission has grouped wire centers that have significantly different local calling areas, and have significantly different density characteristics. Rather than risk a finding of non-impairment that is only valid with respect to some of the wire centers within the group, it would be preferable to further subdivide these particular markets. Unless this is done, the result may be to eliminate competition based upon UNE-P without any assurance that facilities-based competition will expand to fill the resulting void.

Measuring Homogeneity

81. In the Ohio Proceeding I developed a homogeneity index which reflects the degree to which wire centers are significantly different from a central wire center within each major market area. I analyzed data for every SBC Ohio wire center within Ohio. I followed a multi-step process, starting with quantitative data for each wire center. I ranked each wire center with respect to the following factors: total number of lines; the ratio of enterprise lines to total lines, the number of lines per square mile (density), and the number of carriers collocated at the wire center (although not necessarily serving mass market customers through that collocation facility). I then combined these rankings by giving them equal weight in the form of an index value.

82. In general, a lower index value suggests a likelihood of more extensive CLEC activity (currently or in the future), and it suggests a greater likelihood that CLECs will conclude that it is economically feasible to serve mass market customers in that wire center using their own switch (now or in the future). These index values were then used, in conjunction with information concerning airline distances, UNE rate zones, and other factors, to identify contiguous groups of wire centers with reasonably homogeneous characteristics.

83. I first gathered line density data for all wire centers in the Ohio Commission-designated Markets. I separately analyzed the wire centers within the designated markets in the vicinity of Akron, Cincinnati, Cleveland, Columbus, Dayton, and Toledo.

84. I sorted the line density data for wire centers in each metropolitan area from high to low. In the Dayton set of markets, for example, I found DYTNOH22 to have the highest line density, DYTNOH25 to have the second highest, DYTNOH29 to have the third highest, and so on. I then assigned a numerical rank to each wire center based upon how closely they compared with the initially selected wire center within that set of markets. Since DYTNOH22 was the most dense wire center, I assigned it a 0 rank. Since DYTNOH25 was the next highest, I assigned it a 1 rank. I assigned a 2 rank to DYTNOH29, and so on.

85. After finding the wire center with the highest line density in each metropolitan area, I began sorting and ranking wire center data for each of the remaining factors (line counts, the ratio of enterprise lines to total lines, and the number of collocated carriers). For these factors, however, the wire center with the highest value did not necessarily get a 0 rank. In these remaining cases, I assigned the wire center with the highest line density a 0 rank and ranked the other wire centers based upon how closely they compared with the most dense wire center.

86. For example, in the Dayton area, wire center DYTNOH29 had the highest line count, CNTMOH43 had the second highest, DYTNOH22 had the third highest, DYTNOH27 had the fourth highest, and so on. Unlike with the line density data, I did not assign a 0 rank to DYTNOH29, a 1 rank to CNTMOH43, a 2 rank to DYTNOH22, and a 3 rank to DYTNOH27. Instead, I assigned the 0 rank to DYTNOH22 (since it was the most dense), 1 ranks to CNTMOH43 and DYTNOH27 (since they were one place away from DYTNOH22 in the sort), a 2 rank to DYTNOH29 (since it was two places away from DYTNOH22 in the sort), and so on.

87. I replicated this process for each set of data (line counts, the ratio of enterprise lines to total lines, and the number of collocated carriers) in each metropolitan area. Then, for each wire center, I weighted and summed the ranks they were assigned for each data set. Since I placed equal weight on the ranks for each data set, this process amounted to taking an average of the four ranks assigned to each wire center. For example, since DYTNOH22 received a 0 rank in each data sort, its "average" rank was also 0. However, in the case of Dayton wire center DYTNOH26, it was assigned a rank of 8 in the line count sort, a rank of 12 in the line ratio sort, a rank of 6 in the line density sort, and a rank of 11 in the collocation sort. This wire center, then, had an "average" rank of 9.25.

88. This approach is conceptually sound, similar to the manner in which economic indices are developed. In this context, my goal was to sort wire centers on the basis of the degree to which they share characteristics that are similar to each other; I accomplished this by comparing all of the wire centers to a common benchmark or "index" based upon the initially selected wire center. A wire center that was slightly more dense, or slightly less dense, (regardless of the direction of the difference) was one step removed from the initially selected

wire center. Other wire centers (with even more disparate density) were logically ranked farther away from the initially selected wire center.

89. Publicly available data from the FCC's Synthesis or Hybrid Cost Proxy Model (HCPM) was used to estimate the extent to which enterprise customers are present in each wire center. This is an important variable to consider, because CLECs that are attracted to a wire center because of the potential for profitably serving enterprise customers may find that it is also economically feasible to serve mass market customers.

90. This variable was developed in the following manner: Single-line business lines were subtracted from total business lines to develop an estimate of multiline business lines. Voice grade equivalent special access lines were added to this number to develop an estimate of the number of enterprise lines. This estimate was divided by total lines (including voice grade equivalent special access lines), to develop the relative proportion of enterprise lines present in each wire center.

91. Once the sorting and indexing process was completed for each variable (total lines, proportion of enterprise lines, line density, and number of collocating carriers), the index values for each wire center were combined to develop a cumulative index value for each wire center. Absent a compelling reason to give greater weight to particular factors, I gave the same weight to each of the four variables (i.e, the index for lines was given the same weight as the index for collocation). For example, the resulting index values ranged from 0 (for the initially selected wire center) to approximately 26.8 for the 30 SBC Ohio wire centers in the Columbus area.

92. This process allowed me to systematically identify those wire centers with characteristics that were relatively similar to those of the initially selected wire center. Those with much higher index values had relatively dissimilar characteristics, and were less likely to attract facilities-based competition.

93. I then grouped the wire centers along with their index values within each of the Markets defined by the Ohio Commission. I looked for outliers or other indications of a lack of homogeneity, based upon the index values and other factors.

94. I also reviewed the individual data sets included in the indices and I reviewed the analysis of local calling scopes that was performed by OCC witness Hagans.

Specific Markets

95. Part of the Cleveland MSA, Market 7 stretches from southwest to northeast over a distance of more than 30 miles. It generally lies to the east of the most urbanized portions of the Cleveland MSA. Within this group, the Solon wire center (SOLNOH24) had the lowest index value (13.25). This was less than half the average index value of the remaining 8 wire centers in this group (28.41). In fact, the Solon wire center had characteristics that are much more similar to those of the adjacent wire center to the immediate northwest (BCWDOH46), which had an index value of 9.00.

96. To the northeast of Solon, the nearest wire centers in Market 7 are Chagrin Falls (CHFLOH24) with an index value of 31.00, Chesterland (SCLDOH72) with an index value of 29.00, and Kirtland (KRLDOH25) with an index value of 30.50. At the northern end of Market 7, the adjacent Mentor (MNTROH25) and Painesville wire centers (PNVLOH35) had index values of 23.25 and 22.75, respectively. The remaining wire centers (MOTLOH25 and LYTPOH25) had index values of 33.25 and 36.75, respectively. Finally, the Bedford wire center (BDFROH23), immediately southwest of Solon, had an index value of 20.75.

97. If the Ohio Commission's basic market definitions are used, I recommend dividing Market 7 into two sub-markets, placing Solon and Bedford in "Market 7 South" and designating the remaining 7 wire centers as "Market 7 North." This solution substantially reduces the heterogeneity of Market 7.

98. Part of the Columbus MSA, Market 13 lies south of Columbus, stretching over 60 miles from South Solon in the west to Rushville in the east. Not only is Market 13 rather large, but it is also relatively heterogeneous. The Hilliard wire center (HLRDOH87) had the lowest index value (9.00). This was less than half of the average index value of the remaining 13 wire centers in this group (20.71), as shown in the table below. With the exception of the Hilliard wire center, the wire centers in Table 1 were listed in order, moving from west to east. In fact, the Hilliard wire center had characteristics that are much more similar to those of the adjacent Market 12 wire centers to the immediate north (UPAROH48), which had an index value of 7.50 and to the immediate east (CLMBOH27), which had an index value of 7.25 .

Table 1
Market 13 Wire Centers' Homogeneity Index

CLLI	Exchange Name	Index Value
HLRDOH87	Hilliard	9.00
SSLNOH88	South Solon	26.75
SDLIOH87	Sedalia	25.50
LONDOH85	London	20.75
WJSNOH87	West Jefferson	21.75
HRBGOH87	Harrisburg	23.50
NWRMOH66	Alton	17.75
GVCYOH87	Grove City	16.00
LCKBOH49	Lockbourne	15.00
CNWIOH83	Canal Winchester	15.75
CRRLOH75	Carroll	21.00
LNCSOH65	Lancaster	15.75
SGGVOH74	Sugar Grove	24.75
RUVLOH53	Rushville	25.00

99. If the FCC decides to rely at least in part on the Ohio Commission's tentative market definitions, I recommend, at a minimum, separating Hilliard from the remainder of Market 13. In fact, Hilliard has characteristics that are quite similar to the adjacent wire centers to the north and east, both of which are in Market 12. If one were only considering index values as the criteria, it would be reasonable to move the Hilliard wire center into Market 12. However, all of the market 12 wire centers are in UNE rate zone C while Hilliard is in UNE rate zone D. Accordingly, I recommend placing the Hilliard wire center in a stand alone submarket, designated Market 13 North.

100. While not as critical as separating Hilliard from the remainder of Market 13, a further improvement in homogeneity could be achieved by dividing the remaining Market 13 wire centers into three groups moving from west to east. Harrisburg (HRBGOH87), London (LONDOH85), South Solon (SSLNOH88), Sedalia (SDLIOH87), and West Jefferson (WJSNOH87) could be grouped together and designated as Market 13 West. Alton

(NWRMOH66), Grove City (GVCYOH87), Lockbourne (LCKBOH49), and Canal Winchester (CNWIOH83) could be grouped together and designated as Market 13 Central. Finally, Lancaster (LNCSOH65), Carroll (CRRLOH75), Rushville (RUVLOH53), and Sugar Grove (SGGVOH74) can be grouped together as Market 13 East. This approach would further improve the homogeneity of the markets in this section of the state.

101. In summary, I recommend designating the Hilliard wire center (HLRDOH87) as the lone wire center in Market 13 North. If Market 13 is to be further subdivided, I recommend this be accomplished in the following manner:

Table 2
Market 13 Sub-markets

Market 13 North	Market 13 West	Market 13 Central	Market 13 East
HLRDOH87	WJSNOH87	NWRMOH66	LNCSOH65
	HRBGOH87	GVCYOH87	CRRLOH75
	LONDOH85	LCKBOH49	RUVLOH53
	SSLNOH88	CNWIOH83	SGGVOH74
	SDLIOH87		

102. For all intents and purposes, there was just one carrier serving both residential and business mass market customers in Markets 5, 6, 7, 11, 12, and 13. In addition to this carrier ***Proprietary **Proprietary*** was serving residential customers, but only in one wire center (Market 12). In fact, there was only one Ohio wire center in dispute ***Proprietary **Proprietary*** where there were two CLECs serving the residential mass market. The remaining wire centers had either one CLEC or no CLECs serving residential customers.

103. Since there was virtually no competitive activity in the residential portion of the mass market, it seems that CLECs have encountered differing levels of impairment in attempting to profitably serve residential and small business customers using their own switching equipment.

104. Disparities in the data with respect to residential and small business mass market customers suggest there are differences in the degree of impairment that applies to these two customer groups. Conclusions that are reached with respect to non-impairment based on small

business mass market activity may not be valid for the residential mass market. It should be understood that, to the extent one concludes that impairment does not exist in certain Ohio markets, the decision will be based almost entirely upon data for CLECs that are exclusively using their own switch to serve business customers. As a result, the ultimate impact of applying a finding of non-impairment to residential customers will be to reduce or eliminate UNE-P based competition for residential customers, with no assurance that there will be an offsetting increase in facilities-based competition for those customers.

V. Impairment Analysis

SBC Ohio Analysis and OCC Response

105. During the Ohio Proceeding, SBC Ohio witness Mr. Deere submitted the results and a description of SBC Ohio's impairment analysis. He explained that SBC Ohio was challenging the FCC's national finding of impairment in 10 of the 23 Ohio Markets set forth by the Ohio Commission. [Deere, Phase II Direct Testimony, p. 2]

106. Mr. Deere clarified that the only TRO trigger considered in the SBC Ohio impairment analysis was the self-provisioning trigger. In other words, SBC Ohio exclusively focused on whether or not "three or more unaffiliated competing carriers each is serving mass market customers in a particular market with the use of their own switches." [TRO, ¶ 501]

107. Mr. Deere summarized the data and methodology utilized in the SBC Ohio impairment analysis as follows:

> Unbundled loops are identified in SBC Ohio's mechanized systems on a wire center-by-wire center basis. As a consequence, the data were extracted for my analysis on that same basis. Likewise, E911 listings contain a reference to a wire center, not a market defined by the PUCO. As a consequence, these data were also extracted on a wire center basis. Using the wire center-to-Market Cluster mapping reflected in Attachment WCD-MMS-4, this "raw" wire center data can then be rolled up into the PUCO's geographic markets for application of the trigger. [Deere, Phase II Direct Testimony, p. 7]

108. SBC Ohio witness Mr. Shooshan also submitted direct testimony in Phase II of the Ohio Proceeding. His testimony was more general in nature, containing mostly caveats that he felt the Ohio Commission should heed in reviewing the testimonies and/or trigger analyses submitted by other parties in Phase II of its proceeding. Among other points, Mr. Shooshan discussed potential reasons (or the lack thereof) for excluding CLECs from an impairment

analysis. [Shooshan, Phase II Direct Testimony, p. 15]

109. The major problem with SBC Ohio's impairment analysis was that SBC Ohio treated certain carriers as triggering CLECs in circumstances where the status of the CLECs was ambiguous, or there was reason to believe the CLECS should not count toward the "trigger" requirement.

110. SBC Ohio assumed a CLEC qualified toward meeting the TRO "trigger" requirements even if there was evidence suggesting the CLEC was not, in fact, using its own switch to serve mass market customers. Similarly, SBC Ohio treated CLECs as "triggers" even if the CLECS's activities did not comport well with the underlying purpose of the trigger analysis – looking for empirical evidence that impairment does not actually exist in a particular market, despite the FCC's nationwide finding of impairment.

111. For example, in a few cases a particular CLEC serves a tiny number of mass market lines. It is questionable whether this data provides a reliable indicator of whether or not impairment exists. While the TRO did not provide specific guidelines for cleaning up "noise" in data sets, or for the removal of anomalies, it is common practice for regulatory commissions to eliminate from consideration data that is insignificant or immaterial, focusing exclusively on evidence that is both reliable and material. Mr. Deere recognized the necessity of excluding some CLECs on the grounds that they served very few customers.

> **Q18. ARE ALL UNIQUE, UNAFFILIATED CLECS THAT HAVE UNBUNDLED MASS MARKET LOOPS IN A WIRE CENTER INCLUDED IN DETERMINING WHETHER THE TRIGGER IS MET FOR A PARTICULAR MARKET?**
> A18. No. If a CLEC has fewer than five qualifying unbundled loops in a particular wire center, that CLEC has not been counted for that wire center. I have used this limit as a uniform, objective means designed to exclude any CLEC "customers" that might only be the CLEC's test lines or administrative lines in that wire center. However, that same CLEC could still be counted toward meeting the trigger in that market if it has five or more qualifying unbundled loops in one or more other wire centers in the market. [Deere Phase II Direct, p. 9]

Examining Individual CLECs

112. Multiple CLECs fall within these "grey" areas. In his Phase II direct testimony, Mr. Deere listed the 13 CLECs SBC Ohio believes "qualify as triggers in the Ohio Markets." [Deere, Phase II Direct Testimony, pp. 18-19] Of these 13, over half – a total of 8 CLECs –

involved factual circumstances that made their status ambiguous or questionable, yet SBC Ohio included every one of these CLECs in its trigger analysis. These carriers were:

AT&T Communications of Ohio, Inc.,
Comcast Cable Communications, Inc.,
ICG Telecom Group, Inc.,
KMC Telecom III LLC,
MCI/Worldcom,
NuVox Communications of Ohio, Inc.,
Sprint Communications Company, L.P., and
XO Communications Ohio, Inc.

113. In Market ***Proprietary Proprietary***, AT&T served a total of ***Proprietary Proprietary*** mass market lines, all of which were located in the ***Proprietary Proprietary*** wire center. Similarly, AT&T served just ***Proprietary Proprietary*** mass market lines in the ***Proprietary Proprietary*** wire center (which was included in the Ohio Commission's definition of Market 13).

114. Based on this more current data provided by AT&T, that company's competitive presence in Market ***Proprietary Proprietary*** did not rise to Mr. Deere's "five qualifying unbundled loop" standard for a "triggering CLEC."

115. AT&T's ***Proprietary Proprietary*** line presence in the ***Proprietary Proprietary*** wire center fell below the five line standard because it was lower line count and ***Proprietary Proprietary***.

116. Mr. Deere included E911 listings for Comcast Cable Communications, Inc. on the basis that Comcast Phone of Ohio, LLC is a licensed CLEC in Ohio and uses a circuit switch located in Ohio to provide local service to customers in Ohio. He made no mention of the fact that Comcast is primarily a cable television carrier, nor did he attempt to reconcile his treatment of Comcast with statements in the TRO suggesting that the FCC did not expect state commissions to give much, if any, weight to evidence concerning telephony services provided over cable television facilities.

117. For example, the FCC stated that a cable company providing local phone service "provides no evidence that competitors have successfully self-deployed switches as a means to access the incumbents' local loops, and have overcome the difficulties inherent in the hot cut

process". [TRO, ¶440] Similarly, paragraph 446 provides:

> [B]oth cable and CMRS are potential alternatives not simply for switching, but for the entire incumbent LEC telephony platform, including the local loop. We are unaware of any evidence that either technology can be used as a means of accessing the incumbents' wireline voice-grade local loops. Accordingly, neither technology provides probative evidence of an entrant's ability to access the incumbent LEC's wireline voice-grade local loop and thereby self-deploy local circuit switches. Rather, competition from cable telephony and CMRS providers only serves as evidence of entry using both a self-provisioned loop and a self-provisioned switch. [Id., ¶ 446]

118. For the same reasons why the FCC rejected evidence of cable telephony during its national mass market impairment analysis, it is not appropriate to assume that the activities of a cable television carrier are indicative of non-impairment for mass market switching. Unless a cable television carrier is combining its own circuit switching equipment with an ILEC's unbundled loops in a manner that is similar to the way ordinary CLECs combine circuit switching equipment with unbundled loops, the activities of the cable carrier are not particularly relevant to the question of whether or not impairment exists. Unless the circumstances facing Comcast are sufficiently similar to those of other CLECs, Comcast's activities should not be relied upon as evidence of what is economically feasible for other CLECs. Stated another way, SBC Ohio did not offer any justification for assuming the actions of a uniquely situated cable carrier are helpful in understanding the degree of impairment facing a typical CLEC.

119. ICG Telecom Group, Inc. (ICG) responded to Ohio Commission Staff discovery request Set 1, No. 12c. that ***Proprietary Proprietary***. However, in response to Ohio Commission Staff discovery request Set 1, No. 14a, it indicated that ***Proprietary Proprietary*** . Confronted with these conflicting responses, SBC Ohio chose to include this carrier in its trigger analysis.

120. In response to OCC discovery, KMC Telecom III LLC (KMC) indicated:

> ***Proprietary

Proprietary*. [KMC Response to OCC Request Set 1, No.1]

121. In response to OCC discovery, MCI/Worldcom (MCI) indicated:

***Proprietary**

Proprietary*. [MCI Response to OCC Request Set 2, No.2]

122. In response to OCC discovery, XO indicated:

***Proprietary**

Proprietary*. [XO Response to OCC Request Set 1, No.1]

123. NuVox explained its situation in response to OCC discovery:

***Proprietary**

Proprietary*. [NuVox Response to OCC Request Set 1, No. 4]

In a subsequent discovery response, NuVox clarified its situation, and indicated that it did not plan to serve mass market customers using its own switches:

***Proprietary

Proprietary*.
[NuVox Response to OCC Request Set 2, No. 5b]

124. Depending upon how ICG's, KMC's, MCI's, XO's, and NuVox's somewhat ambiguously worded responses are interpreted, one could reasonably conclude that these carriers do not qualify as triggering CLECs. Nontheless, SBC Ohio included each of these CLECs in its trigger analysis.

125. Sprint stated that it ***Proprietary

Proprietary*. [Sprint Response to Staff Discovery Set 1, No. 1] Sprint explained that ***Proprietary

Proprietary*. One portion read as follows:

***Proprietary

Proprietary*. [See, Exhibit 1 provided in response to Staff Discovery Set 1, No. 11]

126. This situation posed at least two different complications. First, Sprint ***Proprietary **Proprietary***. Rather, it ***Proprietary **Proprietary***. Second, the

affiliate in question was an Ohio ILEC. For similar reasons to why the FCC disregarded cable telephony providers in arriving at its nationwide impairment findings, the TRO implied that little weight should be placed on competitive activities of nearby ILECs, since these carriers tend to be uniquely situated and thus their activity isn't necessarily representative of the impairment conditions facing a typical CLEC. Paragraphs 440 and footnote 1352 suggest that ILEC-related market activity should be evaluated on a case-by-case basis:

> Accordingly, much of the deployment relied upon by the BOCs in fact provides no evidence that competitors have successfully self-deployed switches as a means to access the incumbents' local loops, and have overcome the difficulties inherent in the hot cut process. [TRO, ¶ 440]
>
> We note, however, that some of this competitive deployment could be considered by states in determining whether the triggers discussed below have been satisfied in specific markets. [Id., footnote 1352]

Minimal Lines Served

127. There are some instances in which a carrier serves so few mass market lines, it is questionable whether the data should be relied upon as evidence of a lack of impairment. In the TRO, the FCC did not provide any specific guidelines concerning how to deal with situations in which tiny amounts of data are uncovered that are contrary to the general pattern of evidence. The TRO did not provide specific guidelines for cleaning up "noise" in data sets, yet this is common practice in most types of economic analysis. Similarly, it is common practice for regulatory commissions to eliminate from consideration data that is insignificant or immaterial, and to rely instead on evidence that is both reliable and material.

128. The FCC followed a similar approach in dealing with some anomalous evidence in the portion of the TRO devoted to its nationwide finding of impairment for mass market switching.

> BiznessOnline.Com cites data compiled by a coalition of competitive carriers which examined six representative markets and found that approximately 90 percent of the loops used by competitive carriers in these markets are DS1 capacity or higher loops. Specifically, according to the BOCs, competitive LECs are, as of year-end 2001, serving at least 13 million business lines over their own switches.
>
> On the other hand, the record indicates that competitive LECs have self-deployed

> few local circuit switches to serve the mass market. The BOCs claim that, as of year-end 2001, approximately three million residential lines were served via competitive LEC switches. Others argue that this figure is significantly inflated. Even accepting that figure, however, it represents only a small percentage of the residential voice market. It amounts to less than three percent of the 112 million residential voice lines served by reporting incumbent LECs. [TRO, ¶¶ 437-438]

129. In other words, the FCC chose to dismiss evidence of non-impairment because the evidence in question was relatively trivial in a national context (just three percent of the nationwide residential market).

130. In the Ohio Proceeding, we found instances in which a carrier was serving a relatively small number of mass market lines using its own switch. Sprint Communications Company L.P. provided a good example. In Market ***Proprietary Proprietary***, Sprint served ***Proprietary Proprietary*** mass market lines. Similarly, in Market ***Proprietary Proprietary***, Sprint served ***Proprietary Proprietary*** mass market lines, spread across ***Proprietary Proprietary*** wire centers.

131. These are relatively minuscule quantities for a carrier the size of Sprint, which currently operates primarily as an ILEC and an IXC in Ohio. To the extent Sprint has made an effort to begin operating as a CLEC, its activities have apparently been largely limited to the use of UNE-P. However, even those activities have not been very substantial relative to this firm's overall financial and technical capabilities. Thus, one could reasonably disregard the relatively minuscule number of mass market lines served by Sprint as not providing significant evidence of non-impairment.

132. SBC Ohio witness Mr. Deere dismissed any effort to exclude data for any other carriers on the basis that their activity is trivial or *de minimis*, by contending that efforts would be "simply an attempt to rewrite the FCC's *Triennial Review Order*." In his interpretation of TRO paragraph 501, Mr. Deere argued that the mere existence of a CLEC in a given market (no matter how trivial) "indicates that existing barriers to entry are not insurmountable." [Deere, Phase II Direct Testimony, p. 21] Although SBC Ohio focused exclusively on a CLEC's presence in a market, without adequately considering the magnitude of that presence, Mr. Shooshan cited the same TRO paragraph and summarized his reasoning as follows:

> Further, this is not a test of the extent of local competition. TRO, 114. Given that competitors have actually entered, one can reasonably infer that they have achieved minimal efficient scale or expect to before very long. [Shooshan, Phase II Direct Testimony, p. 22]

133. Based on this reasoning, SBC Ohio argued against other parties' efforts to apply an appropriate *de minimis* standard, or to evaluate whether or not specific evidence has probative value. In my opinion, these arguments were not well taken.

134. First, since in TRO paragraphs 437 and 438 the FCC itself distinguished between significant and insignificant evidence of competitive switching activities. Hence, the concept of dismissing anomalous data hardly qualifies as an attempt to rewrite the TRO.

135. Second, I do not believe it is necessary, or feasible, to impose a uniform numerical standard in deciding which CLECs should be counted toward the self-provisioning "trigger." Instead, it is reasonable to consider the relative magnitude of a particular piece of numerical data in context, along with other available evidence. Each piece of evidence should be closely examined, to determine if it suggests the CLEC has not experienced impairment, or if it is indicative of unusual or exceptional circumstances not applicable to other carriers, or whether it is indicative of failed entry attempt, suggesting a substantial impairment problem exists.

136. Third, even if evidence of *de minimis* market entry were sufficient to demonstrate that entry barriers are not "insurmountable" that evidence would not be sufficient to show that entry barriers are low, or to show that impairment doesn't exist. To the contrary, the presence of a *de minimis* number of mass market lines may be evidence that impairment is a major problem, and that facilities-based entry is neither totally impossible nor economically feasible. Thus, evidence of a *de minimis* number of mass market lines may serve as further proof that impairment exists, rather than being proof that impairment is not present.

137. Depending upon how various ambiguous factual situations are interpreted, the final conclusions concerning impairment, or a lack of impairment, can differ significantly. For example, if one were to exclude carriers where the evidence of facilities based provisioning of mass market customers is *de minimis*, or where the CLEC's status in serving mass market customers is ambiguous, the final conclusions will differ greatly from those presented by SBC Ohio. In fact, SBC Ohio's claim that the FCC's national finding of impairment should be overturned in multiple Ohio markets was almost entirely dependent upon its decision to resolve numerous ambiguous factual situations in favor of a finding of non-impairment (fulfilling the trigger). If one were to take the opposite approach, resolving all of the ambiguous evidence in favor of not counting these CLECs as fulfilling the trigger, one would reach nearly the opposite conclusion.

VI. Conclusions and Recommendations

138. Through my experience in eight state impairment proceedings, it appears to me that the parties' attempts to interpret the TRO and to conduct impairment analyses have often

fostered more questions than they have delivered answers. For example, should intermodal competitors be treated in the same manner as ordinary CLECs? Is the utilization of a *de minimis* standard appropriate? If a CLEC is no longer actively marketing to mass market customers, but continues to serve three mass market lines in a given wire center, should this CLEC be treated in the same manner as one that is actively marketing to mass market customers and currently services 500 mass market lines using its own facilities? Should a distinction be drawn between a CLEC that says that it is "not serving" mass market customers and one that says that it is no longer "actively marketing" to mass market customers? If a CLEC attempted to serve mass market customers and subsequently abandoned that attempt because it didn't prove to be economically feasible, yet it continues to serve some mass market customers as a result of that failed experiment, how should that evidence be interpreted? Is it indicative of impairment, or a lack of impairment?

139. With regard to these ambiguous situations, I recommend taking a close look at the specific circumstances involved with each carrier.

140. For example, based upon the information that was available in the Ohio proceeding, I would recommend excluding AT&T from Market ***Proprietary Proprietary*** on the basis that it does not have a sufficient competitive presence to rise above a reasonable *de minimis* activity standard.

141. I also recommend excluding Comcast from all Markets in which it is portrayed as a "triggering CLEC" unless it can be demonstrated that Comcast is using unbundled loops obtained from SBC Ohio – in other words, it would be necessary to demonstrate that Comcast's activities are sufficiently similar to those of more typically situated CLECs in order to have probative value regarding a lack of impairment. Because of its unique advantages as a cable television carrier, Comcast's limited use of UNE-L is not necessarily indicative of a general lack of impairment.

142. I also recommend excluding ICG, KMC, MCI, XO, and NuVox from all wire centers in which SBC Ohio has portrayed them as "triggering CLECs" because, although somewhat ambiguous, the evidence suggests that these CLECs are not successfully and actively serving mass market customers using their own switches.

143. I also recommend excluding Sprint from all wire centers in which it is portrayed as a "triggering CLEC" unless it can be demonstrated that its activities are reasonably similar to those of a typically situated CLECs, rather than activities that are unique to Sprint's situation as an affiliate of United Telephone of Ohio.